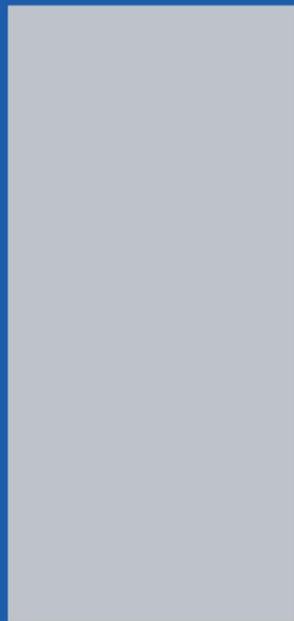
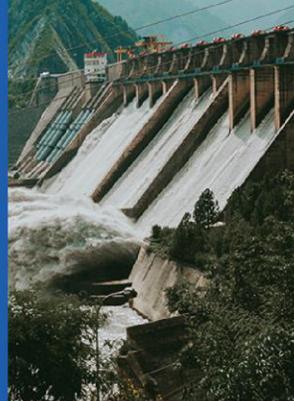




Institute for Development  
of Freedom of Information

# ENERGY SECTOR OVERVIEW



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## **Introduction**

Institute for Development Freedom of Information (IDFI) has overviewed the current developments and challenges in the energy sector of Georgia as of 2020.

IDFI launched the periodic review of the energy sector in 2020, and the current review provides the full state of 2020 in terms of generation and consumption dynamics, electricity trading trends, electricity retail and wholesale prices, and planned and ongoing changes in the sector, as well as forecasts: generation, consumption, and deficit in the coming years.

In the face of existing challenges brought by the COVID-19 pandemic, the socially vulnerable population must not be affected by increased electricity prices, but it is also necessary to consider the interests of the sector stakeholders. Otherwise, a further increase in the deficit is to be expected. This will increase dependence on imports, further increase the price of electricity, and hinder the development of the economy.

The electricity balance forecasts for the 2021-2025 period reflect the expected dynamics of electricity consumption, which is related to a significant degree to economic growth and tourism dynamics. An increase in generation sources is an important precondition for the reduction of electricity deficit, and current forecasts reflect the downward trend of increasing generation capacities in recent years.

The energy sector in Georgia is in the liberalization phase and the timely implementation of planned changes are important for the improvement of the investment environment and promotion of growth in generation sources.

Under the conditions of increased electricity deficit, it is important to pay more attention to energy efficiency, which is an important component of modern energy security and requires support from the state. Arguments have been made that the price of imported electricity is lower than the price of electricity with the implementation of renewable energy projects. However, this does not take into account the value of energy security for the country and the increase of country's energy independence.

## Key Findings: Energy Sector Decreases

- **Electricity generation was down by 5.9% YoY during 2020.** Generation from TPPs was broadly unchanged (-0.7% YoY), but generation from renewable sources was down considerably (-7.7% YoY) over the same period.
- **COVID-19 pandemic sharply reduced electricity consumption (-10.3% YoY) in 2020.** This is largely explained by decreased economic activity, reduced consumption of large crypto manufacturers, and mostly the absence of tourism. Electricity consumption was down by -5.7% YoY in the same period, despite the growing electricity consumption in Abkhazia.
- **Consumption of Abkhazia reached 93% of Enguri HPP generation in 2020, and per capita consumption in Abkhazia is 3.3 times higher than in the rest of Georgia.** Electricity consumption in Abkhazia displayed high growth (+24% YoY) and reached an all-time high (2.5 TWh) during the same period. Decreased generation from Enguri HPP also contributed to the increased share of Abkhazia in 2020.
- **Electricity net imports were worth USD 59 mln in 2020.** Slightly less compared to the last year (USD -11 mln), mainly at the expense of lowering the import price of electricity, which, on average, was 4 USD cents in 2020 (-17% YoY). Electricity imports from Russia were at a record high for the four years, accounting for 35% of total imports, partially to balance the increasing consumption needs of Abkhazia.
- **Increased wholesale prices on electricity for consumer and commercial customers.** The increase is highest (+24%) for household customers with consumption below 102 kWh, as well as for commercial customers represented in the region (+ 90%).
- **FDI in the energy sector decreased four times during the 9m of 2020 as compared to the same period in 2019, amounting to \$46 million.** The COVID-19 pandemic played an important role in the reduction in FDI, but it should be mentioned that against the background of the depreciation of the GEL exchange rate, there are currently no sufficient incentives to promote investment in renewable energy, which could attract FDI in the energy sector and reduce Georgia's dependence on imported electricity.
- **Starting the operation of the Georgian Energy Exchange is a step towards market liberalization.** The functioning of the exchange should facilitate the formation of market prices in the sector, which will have a positive impact on the investment environment and send the right signals to market participants.
- **Electricity consumption is expected to increase to 12.6 TWh this year, which is less than the 2019 level (12.8 TWh).** The total generation is expected to be 11.5 TWh (taking into account the ongoing works on the Enguri) during this period, and the deficit will reach 1.6 TWh, which may be offset by an increase in imports or generation of thermal power plants.

## **Generation: The share of renewable energy decreased to 75%**

Electricity generation was down by 5.9% YoY during 2020. Generation was decreasing from the beginning of the year and peaked in June (-17% YoY), starting to recover thereafter. It displayed positive growth in Sep-Oct months, +6.6% and 6.3% YoY, respectively. It decreased again, however, to -5.0% and -8.2% YoY in November and December, respectively.

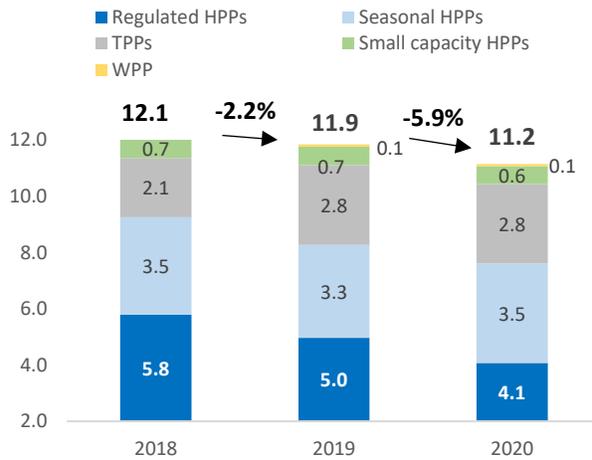
TPPs generation decreased slightly by -0.7% YoY in 2020, but the generation from renewable sources was down sharply by -8% YoY in the same period. These decreases were driven mostly by the shortage of water resources, decreased local demand, and lower export capabilities. The decrease in generation was accompanied by a lower share of renewable sources in the country's total generation. The share of renewable sources was down to 75% in 2020, lower by -1p.p. compared to the same period in 2019.

The total generation of regulated HPPs was 4.1 TWh during 2020, 18% lower compared to the same period in 2019. The share of Enguri HPP in the total generation is decreasing and amounted to 25% of the total in 2020, which is 4% and 9% lower compared to the 2019 and 2018 years, respectively.

Generation from seasonal HPPs displays high growth on the back of the Shuakhevi HPP and reached 3.5 TWh in 2020. This indicator was higher by +7% compared to 2019, mainly due to the operation of the Shuakhevi HPP.

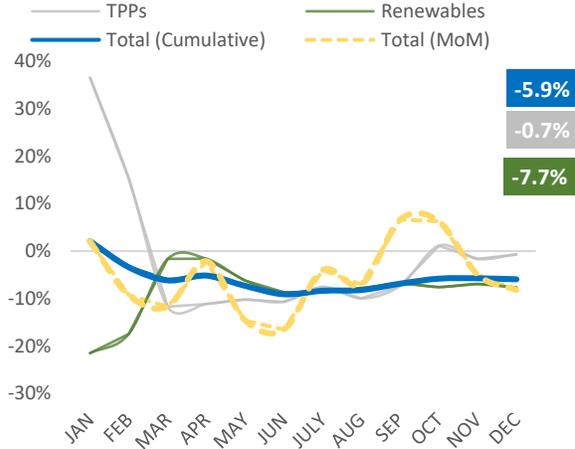
The number of small-capacity HPPs increased, although overall generation was lower. Generation of 71 small-capacity HPPs (including four new HPPs) was down to 0.65 TWh (-3.6% YoY) in 2020. However, it is expected to increase next year, owing to the new HPPs that will become operational in the next year, as well as the full utilization of the HPPs that started operations in the current period.

Fig 1: Electricity generation (TWh) by different sources



Source: ESCO, IDFI

Fig 2: Change in electricity generation YoY (% Cumulative, monthly) in 2020



## Consumption: COVID-19 led to sharply reduced electricity consumption

Electricity consumption was down by -10.3%<sup>1</sup> YoY in 2020. Consumption by industrial producers decreased sharply to 2.4 TWh (-25% YoY) in the same period. The decline in the consumption by households and businesses was more moderate, decreasing to 7.1 TWh (-4.1% YoY). This lower consumption was mainly due to decreased economic activity, a large drop in the crypto industry, and reduced tourism, which was close to zero following the start of the pandemic.

Electricity consumption in Abkhazia reached an all-time high of 2.5 TWh in 2020. Consumption in the region displayed high growth (+23.9% YoY) and reached 93% of Enguri HPP generation in the same period. Decreased generation from Enguri HPP also contributed to the increased share of Abkhazia.

**Per capita, electricity consumption in Abkhazia is three times higher when compared to the rest of Georgia.** Abkhazia, on average, consumed 8,508<sup>2</sup> kWh per capita during 2020. Annual per capita consumption in the rest of Georgia was nearly 2,574 kWh in the same period. Higher per capita consumption in Abkhazia could be explained by “cheap” electricity and crypto mining.

<sup>1</sup> -5.7% considering the electricity consumption of Abkhazia.

<sup>2</sup> The population of Abkhazia is 300,000

Fig 3: Electricity consumption growth (% YoY) in 2020

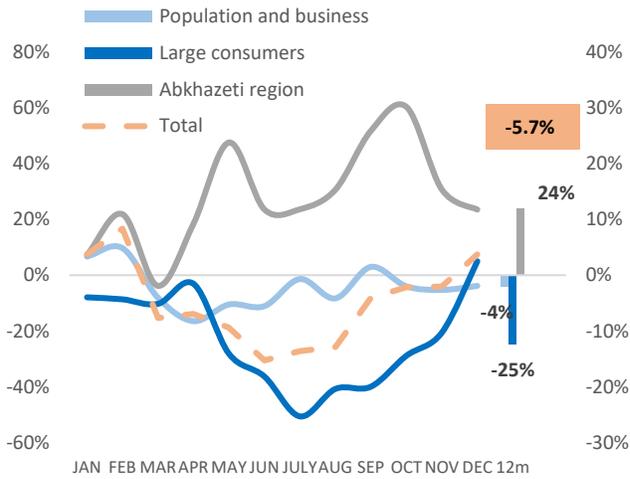
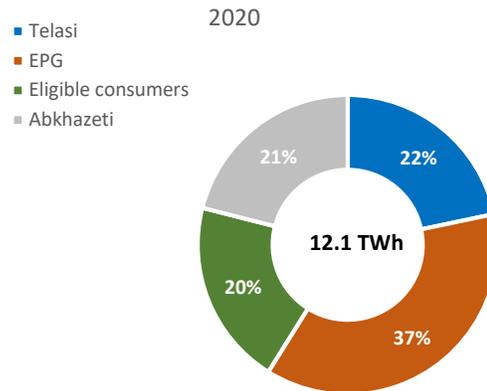


Fig 4: Electricity consumption (TWh) by different groups



Source: ESCO, IDFI

### Electricity Trade: Electricity deficit increases

The electricity deficit reached 1.46 TWh (+5.3% YoY) in 2020. The volume of imports remained almost unchanged (-1% YoY) and amounted to 1.61 TWh, but exports fell sharply, decreasing to 0.15 TWh (-37% YoY) in 2020.

In 2020, imports from Russia reached a record high for the 2016-2020 period (35%). This was mainly due to growing electricity consumption in Abkhazia. Turkey remains the leading export market (41% of total exports), although export volumes saw a significant decline.

Fig 5: Electricity imports (TWh)

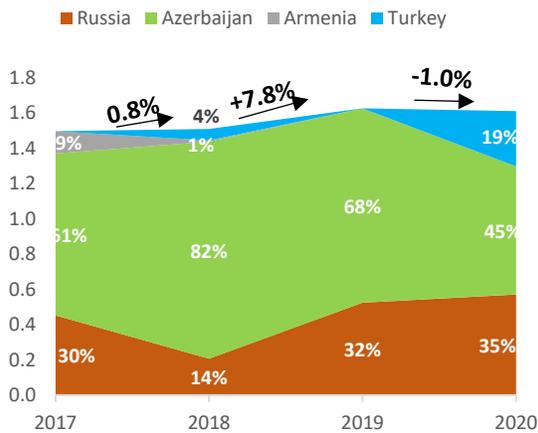
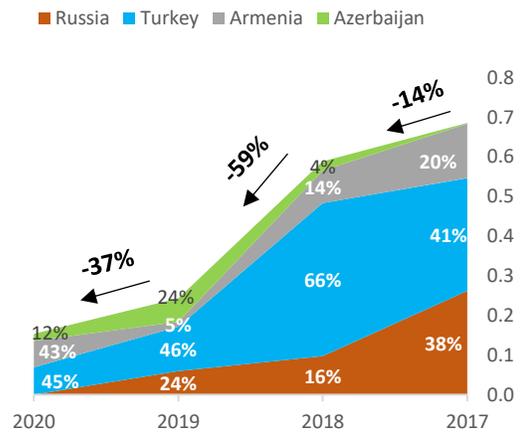


Fig 6: Electricity exports (TWh)



Source: ESCO, IDFI

To balance the electricity deficit, the country’s net imports were worth USD 59 mln in 2020. The value of imports and exports amounted to \$65 million and \$6 million, respectively, in the same period. This constitutes somewhat of an improvement (USD -11 mln) compared to the same period in 2019.

The price of one kWh of electricity imports fell by -17% and averaged 4 cents in 2020, while the export price increased by +18% to 3.8 USD cents in the same period. However, export volume was small.

Fig 7: Electricity trade volumes and deficit\* (USD mln)

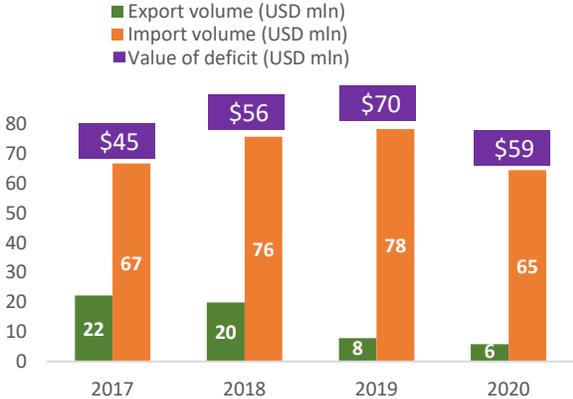
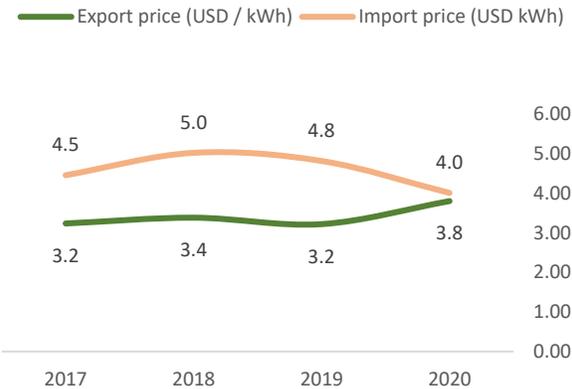


Fig 8: Electricity trade price (USD per kWh)



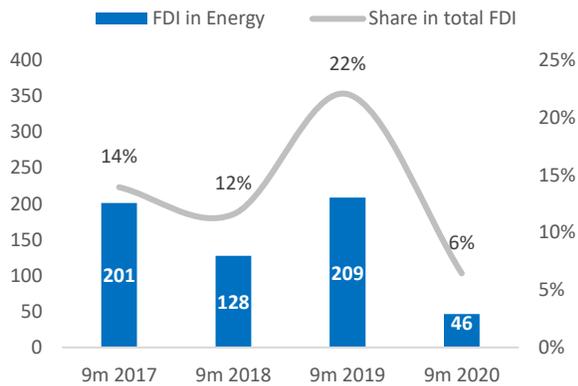
Source: Geostat, ESCO, IDFI

Note: \* Deficit value reflects the volume of foreign currency leaving the country as a result of electricity trade

### Electricity prices: Wholesale prices increased by 25% YoY

FDI in the energy sector decreased four times during the 9m 2020 when compared to the same period in 2019, amounting to \$46 million. The COVID-19 pandemic played an important role in the reduction of the FDI, but it should be mentioned that, against the background of the depreciation of the GEL exchange rate, there are currently no sufficient incentives to promote investment in renewable energy that serve to attract FDI in the energy sector and reduce Georgia’s dependence on imported electricity.

Fig 9: FDI in Georgia (USD mln)

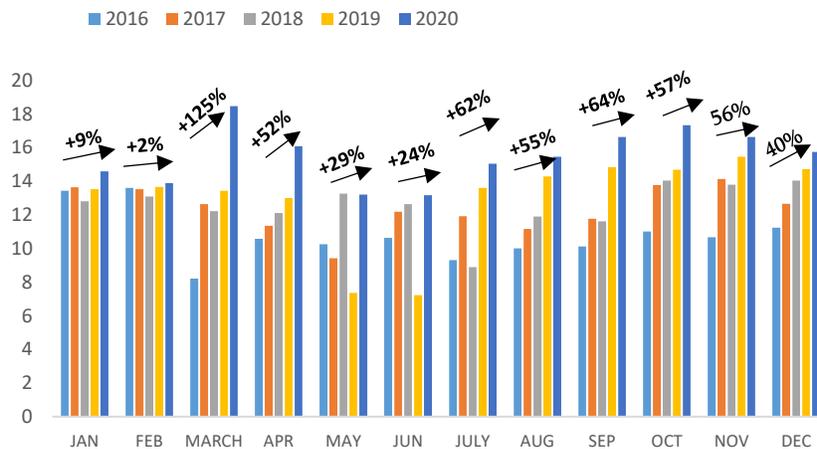


Source: Geostat, IDFI

Average wholesale electricity prices in Apr-Aug were up by 41% YoY in 2020. Wholesale electricity prices have reached an all-time high of five years, displaying double-digit growth.

The decrease of generation from “cheap sources” leads to increases in electricity wholesale price. Wholesale electricity price increased +25% YoY in 2020, partially driven by the depreciation of exchange rates and the decrease of generation from Enguri HPP.

Fig 10: ESCO wholesale price by month (GEL tetri per kWh)



Source: ESCO, IDFI

Consumer and commercial tariffs for electricity will increase sharply in 2021, mainly due to the depreciated exchange rate and the sector's dependence on imports. The sharp increase is in part caused by the maintenance of the tariff in previous periods. The increase is highest (+ 24%) for household customers with consumption below 102 kWh, as well as for commercial customers represented in the region (+ 90%).

Fig 11: Residential electricity tariff \* (GEL tetri per kWh)

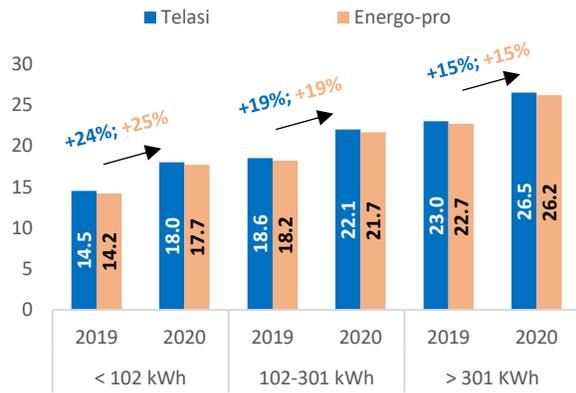
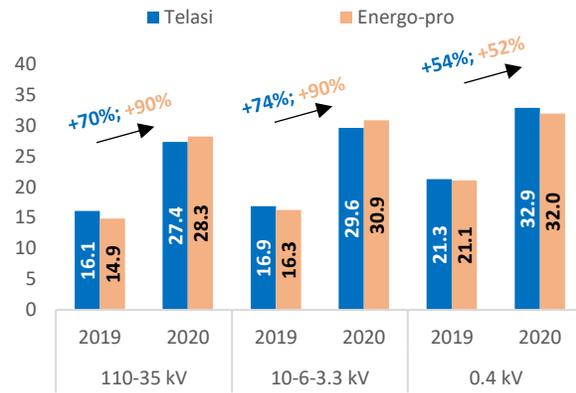


Fig 12: Commercial electricity tariff \* (GEL tetri per kWh)



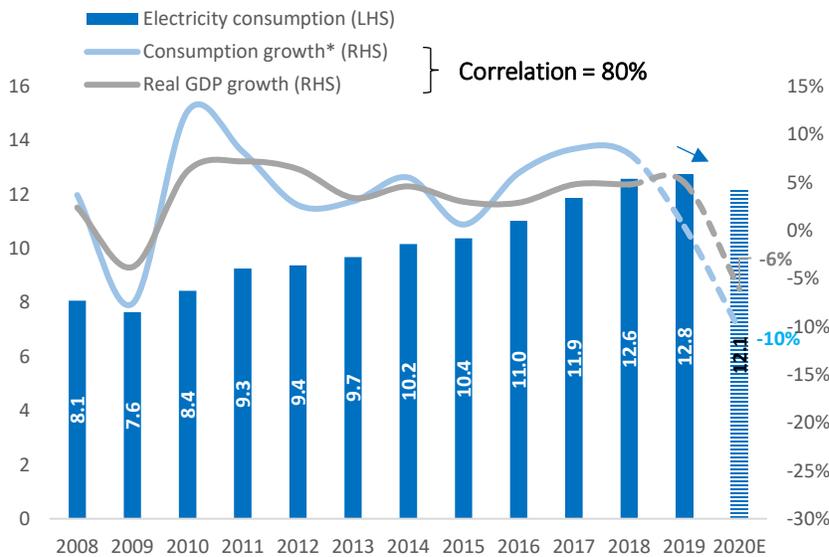
Source: Geostat, ESCO, IDFI

Note: \* Including VAT

### Future Outlook: Deficit will increase

Electricity consumption is highly correlated with economic growth. The correlation between these two (excluding Abkhazia) is nearly 80%. Electricity consumption in Georgia is expected to decrease by 10.3%, while real GDP growth is expected to be around -6.1%.

Fig 13: Electricity consumption (TWh), Consumption growth, and Real GDP growth (%)



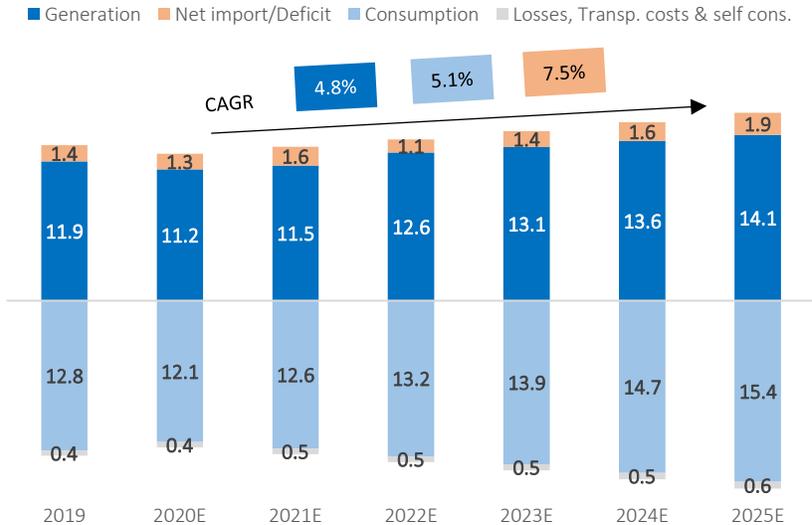
Source: ESCO, IDFI

Note: \* Increase in consumption excluding Abkhazia

Electricity consumption in Georgia is expected to recover in 2022, reaching the 2019 levels. Consumption is expected to grow by 5.1% CAGR in 2021-2025 years and generation is expected to grow by 4.8% annually in the same period. Therefore, the electricity deficit could reach 1.9 TWh in 2025.

Considering PPs generation during the 4m period (Feb-May), the rehabilitation of the Enguri HPP is expected to create an additional deficit of 0.6 TWh in 2021. This will be partially compensated by generation from Shuakhevi HPP and the return of generation from existing PPs to the 2019 level (their generation dropped in 2020 due to lower demand). Total generation is expected to reach 11.5 TWh, and the electricity deficit is estimated at 1.6 TWh. However, increased generation from TPPs could reduce the deficit.

Fig 14: Electricity balance (TWh)



Source: IDFI

It is important news in the sector that the Georgian Energy Exchange (GENEX) started operating in test mode in July 2020 and, according to the legislation, from July 1 this year, it should start the day-ahead energy market operation. The day-ahead energy market stakeholders will be able to buy and sell electricity daily on the stock exchange. The functioning of the energy exchange should facilitate the formation of market prices in the sector, which will have a positive impact on the investment environment and send the right signals to market participants.

## Recommendations

- **Mechanisms for attracting investment by the government were not developed in 2020, and this has hindered the addition of new generation sources, as well as having a negative effect on economic growth.**

Currently, after the abolition of PPAs, there are no mechanisms that could guarantee investors a minimum tariff, hedge FX risks, and promote investment in renewable energy. It is important to develop feed-in tariff or other appropriate mechanisms that could serve this role.

- **The functioning of the energy exchange is important for the development of free-market mechanisms and will contribute to the growth of the country's energy independence and the security and safety of electricity supply.**

Higher imports from neighboring countries decrease energy independence. Market deregulation will improve the investment environment in the sector. In case of price increases, socially vulnerable consumers should be subsidized directly.

- **It is essential to promote renewable energy for households and micro-enterprises by introducing tax incentives and energy-efficient (subsidized) loans.**

GNERC introduced mechanisms that support the integration of micro power plants in the grid, but considering the high cost of the technology, the government should introduce tax incentives (VAT exclusion for renewable energy technology) or energy-efficient loans that would promote the development of renewable technology.

- **Develop a long-term strategy for the sector that will focus on increasing energy efficiency and promoting renewable energy in the country.**

Currently, there is no long-term strategy that would define strategically important projects for the country, support their implementation, and project sector development scenarios.



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